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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/072,412	05/04/98	SCHWARTZ	S 15381

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EXAMINER	
PENDLETON, R	
ART UNIT	**PAPER NUMBER**
2747	3

DATE MAILED: 02/01/00

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary	Application No.	Applicant(s)	
	09/072,412	SCHWARTZ, STEPHEN R.	
	Examiner	Art Unit	
	Brian T. Pendleton	2747	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

Status

1)☐ Responsive to communication(s) filed on *04 May 1998* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☐ Claim(s) *1-27* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☐ Claim(s) *1-27* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

a)☐ All b)☐ Some * c)☐ None of the CERTIFIED copies of the priority documents have been:

1.☐ received.

2.☐ received in Application No. (Series Code / Serial Number) _____ .

3.☐ received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. & 119(e).

Attachment(s)

14) ☒ Notice of References Cited (PTO-892)
15) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
16) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *2* .
17) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
18) ☐ Notice of Informal Patent Application (PTO-152)
19) ☐ Other:

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 24 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 24 recites the limitation "said averaged digital filter algorithm" in line 5. There is insufficient antecedent basis for this limitation in the claim.

Claims 16-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 16 recites the limitation "...one of said acoustic musical instruments..." in line 5. There is insufficient antecedent basis for this limitation in the claim. The preamble mentions *one* musical instrument, while the body of the claim and its dependents point to more than one instrument.

Claims 19 and 20 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Based on claim 16 written in proper form, claim 19 attempts to further limit claim 16 by stating "...averaging the first and second digital filter algorithms." This language is vague. Algorithms cannot be averaged as they represent

procedures. Furthermore, claim 19 does not show the importance or advantage of such a limitation and how it relates to the invention. Accordingly, claim 20 uses an "averaged" algorithm and is therefore vague.

Claims 21-24 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 21 recites the limitation "...one of said acoustic musical instruments..." in line 5. There is insufficient antecedent basis for this limitation in the claim. Like claim 16, the preamble of claim 21 only refers to one instrument, while the body and its dependents are based on two instruments.

In addition, claim 23 also recites "...average digital filter algorithms...", which cannot be accomplished since algorithms are procedures.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

Claims 25-27 are rejected under 35 U.S.C. 102(e) as being clearly anticipated by Menhkoff, US Patent 5,714,918. See figure 6, TP=low pass filter, HP=high pass filter, control unit.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Olden, US Patent 4,340,780. Olden discloses an audio equalizer 46 which is set up using acoustic microphone 38 in the listening area, and audio source 26. As taught in column 5 line 11 – column 6 line 13, the signal picked up by microphone 38 is equalized to the audio source 26. It would have been obvious to one of ordinary skill in the art at the time of the invention to apply the equalizing method to instruments. In column 3 lines 35-36, Olden suggests that the audio source can comprise a cassette tape, tuner, etc. One of ordinary skill would have realized that the audio source could be an instrument. The audio signal would come from a microphone attached to the instrument (per claim 2), as admitted such an apparatus is used in the art (page 4 second paragraph). Accordingly, the equalizer could be set for that instrument and corresponding equalizers could be set for other instruments (per claim 5). One would have been motivated to use the method of Olden for instruments since their

performance can be affected by a listening environment (see column 1 lines 36-40), and to achieve high fidelity, an equalizer must be used to equate the sound heard by a listener positioned in an area and the audio sound from an instrument. Per claims 3 and 4, Olden teaches that a spectrum analyzer is used to compare a reference signal with a signal picked up by a microphone in the listening area (column 1 lines 55-68). The results of the analyzer is used to equalize the system. Since a spectrum analyzer represents a quantitative method for equalizing, it would have been obvious to use a qualitative method such as listening.

Claims 1, 16-18, 21-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miller et al, US Patent 5,506,910. Miller et al disclose a musical instrument 26, microphone 28, automatic equalizer 20, speaker 36, and reference microphone 40. As disclosed in column 3 lines 32-60, the reference microphone 40 picks up sounds made by an instrument and the sine wave adder 22 and adjusts the multi-band gain control 32 to produce a desired frequency response. It would have been obvious to one of ordinary skill in the art at the time of the invention to use the automatic equalizer to equalize the signal from the musical instrument 26 to a desired frequency response, the desired response being the natural sound played by the instrument. The response of the natural sound could be generated by manipulating the sine wave adder 22 accordingly. It was well known that instruments do not sound natural during amplification, the solution occurring in the form of an equalizer. Since Miller et al teaches that an equalizer can be used to generate a desired response with

instruments and a listening environment, one would have been motivated to use their system to generate a response which is the natural sound of the instrument. As to claims 16 and18, there are two microphones 28 and 40, and processor 86 (figure 4). For the same reason above, it would have been obvious to make the filter algorithm equate the signals from the first and second microphones and apply it to the signal from the first microphone. This algorithm could be performed for different sounds (claim 17). Per claims 21 and 22, there is disclosed a first microphone 28, second microphone 40, and equalizer 20, which has a digital processor 86.

Claims 6-11, 13-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miller et al. As discussed above, Miller et al discloses a musical instrument 26, microphone 28, automatic equalizer 20, and second microphone 40. It would have been obvious to set the equalizer to equalize the audio sound with a "natural" sound of a musical instrument. The difference between claim 6 and claim 1 is that the comparison is done on audio recordings. However, this step is not determined patentably distinct over the prior art. The step of recording and comparing recordings accomplishes the same task as the dynamic comparison, therefore, it would have been an obvious design choice to one of ordinary skill in the art, meeting claim 6. As to claims 7 and 14, it would have been obvious to place the microphone on the instrument (page 4 second paragraph). Per claims 8 and 9, Miller et al teaches that the microphone is positioned in a room where the listener would listen to the audio. Per claim 10, it would have been obvious to use a plurality of equalizers for a plurality of

instruments. Per claim 11, figure 5 shows two separate tracks and two separate equalizers. As to claim 13, an automatic equalizer inherently has filter circuits and gain controls to equalize a signal with a desired signal. As to claim 15, the equalizer is Miller et al is digital.

Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Miller et al in view of Hagimori et al, US Patent 5,537,614. Miller et al meet the limitations of claim 6 as explained above. However, Miller et al does not disclose that the first and second audio recordings are displayed and equalization is based on the display. Hagimori et al disclose a signal display unit. One of ordinary skill in the art would have realized that a display unit such as the one described by Hagimori et al can be used to display waveforms and compare them. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to Hagimori et al's display unit and set the equalizer according to the results of the displayed signals. This method accomplishes the same task as sending the signals to a spectrum analyzer, which is taught by Miller et al.

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